

AMENDMENT(S) TO THE DRAWINGS

Please amend Figs. 1, 3, 7, and 11, as indicated in red on the attached Annotated Sheets. Replacement Sheets presenting replacement Figs. 1, 3, 7, and 11 which incorporate the desired changes are also enclosed in the Submitted Drawings section of this amendment.

Please note that Fig. 7 is replaced with an accurate representation of the referenced grayscale photograph.

Applicant has paired up Figs. 1 and 2; Figs. 3 and 4, Figs. 6A and 6B, Figs. 10 and 11, and Figs. 12 and 13, on respective individual sheets, as instructed by the Examiner.

REMARKS

Claims 1-23 are pending in the present application. Claims 1-10, 13-18 and 20-23 were rejected. Claims 11, 12 and 19 are objected to. By this Amendment, claims 6-10, 12, 14-19 and 21 have been amended. This application continues to include claims 1-23.

Applicant thanks the Examiner for the indication that claims 11, 12 and 19 contain allowable subject matter.

The drawings were objected to on numerous grounds in paragraphs 1-10 of the present Office Action. Paragraphs 1-6, and 10 are addressed in the AMENDMENT(S) TO THE DRAWINGS section of the present Amendment. Paragraph 7 was addressed in the AMENDMENT(S) TO THE SPECIFICATION section, wherein the specification was amended to include reference numbers 168 and 185 shown in the drawings.

With regards to paragraphs 8 and 9, relating to a submission of color drawings, and in particular, Figs. 6A, 6B and 6C in the present application, it is respectfully noted that a PETITION TO ACCEPT COLOR DRAWINGS UNDER 37 CFR §1.84(a)(2) was submitted with the original application filing papers when the application was originally filed on January 22, 2004. It is noted that a copy of the PETITION is located in PAIR, under the heading “Transmittal of New Application”. It is respectfully requested that the PETITION be acted upon and accepted in due course, and that the objection to the color drawings (Figs. 6A, 6B and 6C) be withdrawn.

The specification was objected to due to formalities, and in particular for not including the serial number of the related application. The specification has been so amended.

Claims 6-9, 12 and 14-19 were objected to as lacking antecedent basis. Claims 6-9, 12 and 14-19 have been amended to correct this issue. Accordingly, it is respectfully requested that the objection to claims 6-9, 12 and 14-19 be withdrawn.

Reconsideration of the rejection of claims 1-10, 13-18 and 20-23 is respectfully requested.

Claims 11, 12 and 19 were rejected under 35 U.S.C. 112, first paragraph. The Examiner provides an example as to why Equation 3 requires level limits between 0 and 255. The Examiner has suggested that claims 11 and 19 be amended to place $L=0$ at the bottom of the summation sign and $L=255$ at the top of the summation sign. Applicant respectfully submits, however, that the specification makes clear that the invention is not limited to levels of 0 to 255 (see Applicant's specification, e.g., paragraph 0058 at page 12). Applicant's Specification is enabling in that exemplary Equations 3 and 4 are provided for determining the concentration ratio CR.

While the Examiner has identified a condition (no population within a given narrow arbitrary range) wherein the denominator in the Equation set forth in claims 11 and 19 may be zero and thereby yielding an infinite result, it is respectfully submitted that others skilled in the art would recognize such an error condition, as the Examiner did, and identify appropriate ranges for the summation in actual practice. Thus, Applicant's claims 11, 12 and 19 are not, and should not be, limited to a level range of from $L=0$ to $L=255$.

Accordingly, Applicant respectfully requests that the rejection of claims 11, 12 and 19 under 35 U.S.C. 112, first paragraph, be withdrawn.

Claims 1-4, 13-16 and 22-23 were rejected under 35 U.S.C. §102(b) as being anticipated by Scherl, et al. (U.S. Patent No. 4,411,015; hereinafter, Scherl).

Claim 1 recites, in part, “determining the concentration ratio for the image; comparing the concentration ratio to at least one of the one or more classification thresholds; and classifying the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds.”

As set forth in Applicant’s specification at paragraph 0036, page 6, a concentration ratio “CR is a number that indicates how concentrated or widespread the population of elements is, such as, for example, how wide spread the distribution of a histogram is. Generally, if the population is distributed evenly across all levels, the CR is a large number. Likewise, if the entire population is concentrated at a few levels, the CR is generally a small number.” (Emphasis added). An advantage of using the concentration ratio CR is that the “concentration ratio is generally unaffected by noise.” (Applicant’s specification at paragraph 0056).

In contrast, rather than using a concentration ratio indicating how concentrated or widespread the population of elements in a histogram is, Scherl discloses at column 3, lines 16-37, use of the “percentage of very bright components” (K) in the window in discriminating between image and text/graphics areas. In the equation for determining (K) in Scherl, there is only consideration of the percentage of the brightness of grayscale in the range of $S=0.8$ of the brightest occurring grayscale or higher. Accordingly, Scherl does not disclose the use of the concentration ratio (CR) as recited in claim 1 in discriminating between image and text/graphics areas.

Since Scherl does not use a concentration ratio, as recited in claim 1, Scherl further does not disclose “classifying the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds”, as further recited in claim 1.

Accordingly, for at least the reasons set forth above, it is respectfully submitted that claim 1 is not anticipated by Scherl under 35 U.S.C. §102(b), and is allowable in its present form.

Claims 2-4 are believed allowable due to their dependence from base claim 1.

Independent claim 13 is believed allowable for substantially the same reasons set forth above with respect to claim 1.

Claims 14-16 (as amended) are believed allowable due to their dependence from base claim 13.

Independent claim 22 is believed allowable for substantially the same reasons set forth above with respect to claim 1.

Independent claim 23 is believed allowable for substantially the same reasons set forth above with respect to claim 1.

Accordingly, for at least the reasons set forth above, it is respectfully requested that the rejection of claims 1-4, 13-16 and 22-23 as being anticipated by Scherl, et al. under 35 U.S.C. §102(b) be withdrawn.

Claims 20 and 21 were rejected under 35 U.S.C. §102(b) as being anticipated by Poggio, et al. (U.S. Patent No. 5,642,431); hereinafter, Poggio).

Claim 20 recites, in part, “classifying the image in a class using a concentration ratio; using the class to modify the operation of an image capturing device; and applying controlled, equalization to an image generated by the image capture device, where the controlled, histogram equalization uses a concentration ratio.” (Emphasis added). As set forth above, a concentration ratio is a number that indicates how concentrated or widespread the population of elements is in a histogram of an image.

In contrast, Poggio is directed to the detection of faces, and classifies an image as a face or non-face. As set forth in Poggio, at column 4, lines 18-23, “A multi-layer perceptron (MLP) network 304, discussed in connection with FIG. 3, identifies new window patterns as faces or non-faces by taking as input a vector of distance measurements and outputting either a first state, if the vector arises from a face pattern, or a second state, if the vector arises from a non-face pattern.” (Emphasis added). Nowherein in Poggio, however, is there any discussion of a technique that uses a concentration ratio, as recited in claim 20.

Accordingly, for at least the reasons set forth above, it is respectfully submitted that claim 20 is not anticipated by Poggio under 35 U.S.C. §102(b), and is allowable in its present form.

Independent claim 21, as amended, recites in part, “a controlled, equalization processor coupled to the image capture device, that uses a concentration ratio.” Claim 21 is believed allowable for substantially the same reasons set forth above with respect to claim 20.

Accordingly, for at least the reasons set forth above, it is respectfully requested that the rejection of claims 20 and 21 as being anticipated by Poggio, et al. under 35 U.S.C. §102(b) be withdrawn.

Claims 5-10 and 17-18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Scherl in view of Hartmann, et al. (U.S. Pub. No. 2002/0067857 A1; hereinafter, Hartmann).

Claims 5-10 depend from base claim 1. Claims 5-10 are believed allowable in their present form, since Hartmann does not overcome the deficiencies of Scherl with respect to claim 1.

Claims 17 and 18 depend from base claim 13. Claims 17 and 18 are believed allowable in their present form, since Hartmann does not overcome the deficiencies of Scherl with respect to claim 13.

Accordingly, for at least the reasons set forth above, it is respectfully requested that the rejection of claims 5-10 and 17-18 as being unpatentable over Scherl in view of Hartmann under 35 U.S.C. §103(a) be withdrawn.

Claim 1 was rejected for Double Patenting with respect to claim 1 of Application No. 10/224,660 (now U.S. Patent No. 7,079,686 B2). Claim 1 of the '686 patent, however, is not directed to the subject matter of claim 1 of the present application.

Claim 1 of the present application recites, in part, “determining the concentration ratio for the image; comparing the **concentration ratio** to at least one of the one or more classification thresholds; and classifying the image based on the **comparison of the concentration ratio** to at least one of the one or more **classification thresholds**.” (Emphasis added).

In contrast, the '686 patent claim 1 recites in pertinent part, “selectively mark a current pixel as a potential text element; c) **determine a distance** from the current pixel to a previous pixel marked as a potential text element; d) **selectively mark all pixels in between the current and previous pixels as text pixels or image pixels based upon the determined distance**; e) suppress background in the received image data prior to pixel classification by i) **determining whether each pixel is a background pixel by comparing an intensity value associated with each pixel with an intensity threshold**; ii) for each pixel not determined to be a background pixel, **replacing its intensity value with a new intensity value by mapping its**

current intensity value into a range of intensity values corresponding to a full intensity spectrum; and iii) for each pixel determined to be a background pixel, **replacing its intensity value with a new pixel intensity value** corresponding to a terminal intensity value by **mapping** its current intensity into a range of intensity values corresponding to a full intensity spectrum; and wherein the mapping is performed by **multiplying the current intensity by a value corresponding to a maximum intensity value and dividing by the intensity threshold.**” (Emphasis added).

Thus, claim 1 of the ‘686 patent is directed to a totally different method than claim 1 of the present application.

Accordingly, it is respectfully requested that the rejection of claim 1 based on Double Patenting be withdrawn.

For the foregoing reasons, Applicant believes that the present application is in condition for allowance in its present form, and it is respectfully requested that the Examiner so find and issue a Notice of Allowance in due course.

In the event Applicant has overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicant hereby conditionally petitions therefor and authorizes that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (317) 894-0801.

Respectfully submitted,

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SUBMITTED DRAWINGS

Drawings that are being submitted include Replacement Sheets, New Sheets and Annotated Sheets, as indicated on the pages that follow.